

REMARKS

The Office Action mailed April 3, 2006 (“Office Action”), rejects claims 6, 9 and 10-15 under 35 U.S.C § 112, second paragraph as allegedly being indefinite, rejects claims 1, 7, 8 and 10-15 as allegedly being obvious under 35 U.S.C. § 103 over U.S. Published Application No. 2002/0003649 to Feng (“Feng”), and rejects claims 2-6 as allegedly being obvious under 35 U.S.C. § 103 over Feng in view of H. Zimmermann, Monolithic Bipolar-, CMOS-, and BiCMOS-Receiver OEICs; CAS '96 Proceedings, Vol. 1, 1996 International Semiconductor Conference, October 9-12, 1996, Sinaia, Romania IEEE (“Zimmerman”). Applicants respectfully traverse the rejections as follows.

I. The Objections To The Drawings Are Moot

The objections to the drawings are moot in view of the replacement drawings submitted herewith.

II. The Rejections Under 35 U.S.C. § 112 Are Moot

The rejections of claims 6, 9 and 11-15 are moot in view of the amendments to the claims submitted herewith.

III. The Amended Claims Are Patentable Over The Cited References

Feng discloses an opto-electric circuit comprising at least one photo-receiver and at least one transimpedance amplifier. The photo-receiver circuit comprises a plurality small PIN diodes being associated with a dedicated element transimpedance amplifier, wherein the outputs of the element transimpedance amplifiers being connected to a summing amplifier which sums the voltages output from the element transimpedance amplifiers (page 1, right col. par. [0019]).

It is true that Feng is used in an environment for optical communication and is silent as to the optical receiver being used in an arrangement in which an optical fiber directs the light onto the optical receiver, as in the present invention as claimed.

In addition, the present invention of amended claim 1 differs from Feng in that the optical receiver diode as claimed is divided into several partial photo-diodes and does not consist of a

combination of photo-diodes independent from each other. That is, the principle of photo-diode division is not disclosed in Feng.

As stated on page 2 of the description of the present invention, because the partial photo-diodes have a lower depletion layer capacitance than a larger diode, whose area corresponds to the total, the individual transimpedance amplifiers have a wider bandwidth and a better noise behavior.

Amended claim 1 includes the feature that “the size of the partial photo-diodes is adapted to that of a spot of light projected onto the photo-receiver”. Contrary to the estimation of the Examiner on page 3, last paragraph, it would not have been obvious for the person skilled in the art outgoing from the disclosure of Feng firstly, to divide the photo-receiver into partial photo-diodes and secondly, to adapt their size to that of a spot of light projected onto the receiver, in order to increase the bandwidth and the sensitivity of the optical receiver.

Further, amended claim 1 differs from the former claim 1 in that, the following feature has been added: monolithic integration of at least the photo-receiver, the transimpedance amplifiers and the summing amplifier onto a chip together with other circuit components.

This feature is not described by Feng, as correctly mentioned by the Examiner. Accordingly, it is evident that the invention as claimed in amended claim 1 and in amended claim 10, respectively, has many features which are not described or suggest by Feng, and which are significantly advanced over the prior art and specifically over Feng.

It is true, that Zimmermann discloses on page 31 a monolithic integration of PIN photo-diodes in bipolar, CMOS and BiCMOS technology, which allows pure parallel processing of many chips compared to the serial processing of hybrid integration.

However, this reference does not describe the arrangement of the above discussed optical fibre receiver according to amended claim 1 and also the method for receiving a high frequency light signal in an optical receiver according to amended claim 10.

Taking into account the amendments in the new set of claims and the above discussion, it is to mention that the features of amended claims 1 and 10, as mentioned above, are not disclosed or suggested in the cited prior art documents Feng and Zimmermann.

Accordingly, the one of ordinary skill in the art and working in the respective technical field could not derive the above mentioned invention's principle from a combination of the documents Feng and Zimmermann, and the aforementioned advantageous effect of the present invention, namely the providing of a relatively large light-sensitive receptive area for fast optical signals, and the increasing of the bandwidth and the sensitivity of the optical receiver, could not be obtained from documents Feng and Zimmermann each taken alone or in combination.

As to the further documents which have been precautionary cited by the Examiner, namely US-6,392,219 (McCormick) and US-6,834,165 (Feng), we have compared the both Feng documents US`165 and US`649 and found out that these documents differ from each other only by the drafting of the independent claims 1, 9 and 17. The difference concerns the number of the intended photo-diodes.

Under 35 U.S.C. § 103, all claim limitations must be taught or suggested in the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). MPEP § 2143 reinforces this principle: “[T]he prior art reference (or references when combined) must teach or suggest all the claim limitations.” Because the cited references lack the features discussed above, the pending claims are patentable over the citations of record.

IV. Conclusion

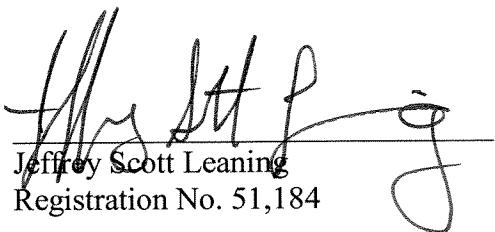
In view of the above, Applicants respectfully request that the rejection of the claims specifically argued, as well as all claims dependent thereon, be reversed. Applicant respectfully submit that the present application is in condition for allowance, and an early indication of the same is courteously solicited. The Examiner is respectfully requested to contact the undersigned by telephone at the below listed telephone number, in order to expedite resolution of any issues and to expedite passage of the present application to issue, if any comments, questions, or suggestions arise in connection with the present application.

No fee is believed to be required for entry and consideration of this Reply. Nevertheless, in the event that the U.S. Patent and Trademark Office requires a fee to enter this Reply or to maintain the present application pending, please charge such fee to the undersigned's Deposit Account No. 50-0206.

Respectfully submitted,

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Appendix:
Replacement Drawings